Python Interview Questions

Python programming language has become popular with desktop application development. It has become a must skill set on most of the companies' requirements in a developer. Python programming language has become popular with machine learning community and is a basic need skill for data scientist/machine-learning developer/deep-learning developer. This article helps you through most of the upto date possible Python interview questions; and covers basic, intermediate and advanced Python interview questions. Example programs and references are provided whenever possible.

- Entry Level – Python Interview Question
- Medium Level – Python Interview Question
- Advanced Level – Python Interview Question

Python Interview Questions – Entry Level

What kind of language is Python ?

Python is :

- **Interpreted** (most of its implementations execute instructions directly, without previously compiling a program into machine level instructions)
- **High-level programming language** (provides strong abstraction from internal details of computer; and is human readable)
- **General-purpose programming language** (the language could be used to write wide variety of applications)

Why is Python called scripting language ?

Python supports scripts: programs written for a Python run-time environment that automate the execution of tasks. These tasks could alternatively be executed one-by-one by a user.

What are the benefits of Python ?

There are many benefits in using Python language. Some of them are :

- Syntax of Python is easy to learn.
- Python is a high-level programming language. So, it provides a good human readability.
- Python is cross-platform. Scripts written on an operating system could be run on another with ease.
- Python has an active community. Many resources and help is available online.
- Python is extensible. Large variety of third-party modules are available.
- Python is free. Python programming language can be used for projects without any cost.

Give a simple example for Python script.

A simple example where a variable is initialized and printed to the console.

```
i = 10
print(i)
```

How to execute a Python Script ?

If python is installed on the machine, command prompt or shell could be used for executing python scripts with **python** command.

```
python fileName.py
```

What is Python Shell ?

Python Shell is an interactive command line interface. Python statements can be executed using Python Shell.

How do you start Python shell ?

python command will start python shell.

```
$ python
Python 3.5.2 (v3.5.2:4def2a2901a5, Jun 25 2016, 22:18:55) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

What is the command to get Python Version ?

Python Version is displayed when Python Shell is started. Otherwise, without starting Python Shell python − version command can be used.

```
$ python --version
Python 3.5.2
```

Which coding convention is preferred for Python ?

PEP-8[https://www.python.org/dev/peps/pep-0008/] is the style guide recommended by Python Organization.

What are the datatypes available in Python ?

Following are the in-built datatypes in Python programming :

- Boolean
- Numeric
    - int
    - float
    - long
    - complex
- Sequence
    - String
    - List
    - Tuple

- Set
- Mapping
  - Dictionary

Which conditional statements are available in Python ?

Conditional statements are the programming statements which alter the course of execution based on a condition.

Like other functional programming languages, Python has following conditional statements.

- Python If
- Python If-Else
- Python For
- Python While

Conditional Statements are also called Control Statements.

Which looping statements are available in Python ?

Looping statements are those which repeat the execution of a set of statements in a cyclic manner based on a condition.

- Python For
- Python While

What is the syntax for Python If statement ?

Python If statement contains if keyword, condition followed by colon symbol (:), and then the statements of if block with indentation.

```
if condition:
    statement1
    statement2
    statementN
```

Condition should evaluate to a boolean value (true or false).

What is the syntax for Python For loop ?

```
for variable in sequence:
    statement1
    statement2
    statementN
```

- **for** is keyword
- **sequence** can be a list, string, typle or rance
- for ith iteration, the ith element of **sequence** is loaded to **variable**
- statements has to written with indentation

Give an example of Python Tuple ?

Tuples are used to store values of different datatypes.

```python
tuple1 = ('Sarath', 'Varma', 1997, 'Kochi')
tuple2 = (1, 2, 3, 4, 5 )
```

Elements are separated by comma and are enclosed in parenthesis.

How do you access elements of Tuple ?

Like in an Array, elements of Tuple can be accessed using index. Index of first element is 0, and index of last element in the tuple is (length of tuple – 1).

How are comments written in Python code ?

Single Line Comments start with # followed by comment content.

Multiple Line Comments are enclosed between triple single quotes or triple double quotes.

```python
# single line commenet

'''Mulitpl
   Line
   Commnet'''

"""Another
   Multiple line
   comment"""
```

Comments improve the readability of a program.

Give an example of Python Class.

Following is an example of Python Class.

```python
class Student:
    'Common base class for all students'

    def __init__(self, name, rollNumber):
        self.name = name
        self.rollNumber = rollNumber

    def displayStudent(self):
        print "Name : ", self.name,  ", Roll Number: ", self.rollNumber
```

The Student class contains a constructor for setting the initial state and a method to display student information.

Python 2.x or 3.x. Which one would you choose and why ?

Python 2.x is legacy, Python 3.x is the present and future of the language.

How do you declare a variable in Python ?

How do you convert float, int, complex value, tuple, list or dictionary to a string ? str() function can be used to convert other data type value to string. str() accepts float, int, complex value, tuple, list or dictionary as an argument and returns string value.

What are the mutable builtin datatypes available ?

Mutable datatype are those

- List
- Sets
- Dictionaries

What are the immutable builtin datatypes available ?

Immutable datatypes are those

- Strings
- Tuples
- Numbers

How to find substring of a string ?

str[start_index:end_index] returns substring of a string, where

- str is the main string
- start_index is position of substring from which it starts in main string. If not provided, default value is 0.
- end_index is the ending index of substring in the main string. If not provided, default value is length of the main string.

How to you initialize an array ?

To initialize an array in Python use assignment operator (=) with values separated by comma and enclosed between square brackets.

```
arr1 = [10, 20, 30, 40, 50]
```

Elements of the array can be accessed using index.

```
arr1[0];
arr1[2];
arr1[1:]
```

Give an example to iterate through all the elements in an array.

For loop can be used to iterate through each element of array.

```
arr1 = [10, 20, 30, 40, 50]

for i in arr1:
    print(i);
```

How to find size of a Python Array ?

len() function can be used to find size of Python array, given the dimension.

```
arr1 = [{10, 20, 30, 40, 50},{10, 20, 30, 40, 50}]

print(len(arr1))
print(len(arr1[0]))
```

What is Frozen Set in Python ?

Frozen set is an immutable version of a Python Set object.

Python Programming

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